Study

| | Expected Value |
|---|---|
| Likely to produce new analytic insights. | |
| Likely to influence decision(s). | |
| High intelligence payoff (in cash) | |
| High intelligence payoff (in political sensitivity). | |

| | RMS Relevancy |
|---|---|
| Potential budget review issue for FY 1982. | |
| Potential cross-program review issue for FY 1983. | |
| Potential program review issue for FY 1983. | |
| Exploits previous PAO initiative(s). | |

| | Type Study |
|---|---|
| RM Type study | |
| CT Type study | |
| CT/RM Type Study | |
| CWG Type Study | |
| Guidance Type Study | |
| External Research | |

| | Level of Interest |
|---|---|
| Possible DCI interest | |
| Possible D/DCI/RM Interest | |
| Past OMB/NSC Interest | |
| Past Congressional Interest | |

| | Other |
|---|---|
| Done Before/Well Studied Topic | |
| Recommend no further consideration | |
| NRO review(s) completed. | |

**Next 3 Page(s) In Document Exempt**

19 November 1980

MEMORANDUM FOR:   D/PBO
                      D/IRO
                      D/PGS
                      D/CLLS

FROM:             AD/PAO

SUBJECT:        PAO Study Plan for FY 1981

REFERENCE:      D/PAO Memorandum, dated 11 Aug 80, subject:  First Draft
                 PAO Study Plan and Input for FY 1983-1987 Guidance

25X1

1.  In August, Art provided you a tentative list of thirty-three (33) studies which PAO had under consideration for its FY 1981 study plan. Since we circulated the reference, the proposed list has been changed a number of times to accommodate new topics and to delete subjects which have either generated little, if any, interest or just seem less promising candidates than others.  Tab 1 identifies the topics that have been deleted and those which have been added to the list since you last saw it.

25X1

2.  We have also had two separate meetings with [ ] to   25X1 discuss the Study Plan.  Our last meeting was yesterday at which time he asked me to do the following:

   o   Circulate the Plan in its present form to the other Office Directors;

   o   Arrange a meeting for him to meet with all the Office Directors to discuss the list of proposed studies. [ ]   25X1

3.  The meeting is scheduled for Monday, 24 November 1980, immediately after Staff Meeting.  Purpose of the meeting is to solicit your general reactions to the study plan and to offer you the opportunity to comment on whether the plan focuses on an appropriate mix of subjects that will be of interest during the FY 1983 program and budget reviews. John does not want to get involved in a "how-to-do-it" discussion or into the specifics of the individual proposals.  The sole objective is to determine if the plan emphasizes the "right" subjects and has "balance" in

25X1   a general sense. [ ]

                                              25X1

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DERIVATIVE CL BY [ ]   25X1
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DERIVED FROM [ ]   25X1
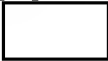
25X1

SUBJECT:  PAO Study Plan for FY 1981

　　　4.  A word of caution--some of the prospectuses have gone through several drafts and are naturally better than others; some are still relatively new and as a result have not benefited from a redrafting exercise.  Please note that the level of effort estimates and the individual staffing assignments are still very tentative at this time. Finally, please recognize that considerable work still needs to be done with providing "specifics" for the individual proposals.

25X1

25X1

cc:  D/DCI/RM
　　　AD/DCI/RM

1 Attachment

25X1

PAO FY 81 STUDY PLAN

PROSPECTUSES

| TAB | SUBJECT | STUDY TEAM LEADER |
|-----|---------|-------------------|
| 1 | Current PAO Commitments | N/A |
| 2 | Intelligence Output Census | |
| 3 | Third World | |
| 4 ✳ | DDO Trend Analysis | |
| 5 | SIGINT Collection Third World Targets | |
| 6 | Post Mortem | |
| 7 ✳ | Defense Attaches | |
| 8 | Crisis Anticipation | |
| 9 ✳ | Imagery Mix Study | |
| 10 | Nuclear Monitoring | |
| 11 | I&W Centers | |
| 12 | R&D | |
| 13 | PAO Resource Analysis Spt System | |
| 14 | System Acquisition in the Intelligence Community | |
| 15 | Inflation | |
| 16 | ELINT Applications | |
| 17 | Survivability | |
| 18 | | |
| 19 | RMS-Resource Allocation Methodology | |

*Handwritten notes in right margin (top box):* — Node cha ... / important / uncertain / high / too must / low / don't understand

25X1

*Handwritten notes in right margin (bottom box):* high / high / withdrawing / high / high

25X1

25X1

✳ NOT INCLUDED at THIS time.

19 November 1980

## Changes to Original Study List

(11 August 1980)

### I. DELETIONS:

The following topics have been dropped from our previous list of candidate studies or incorporated into another study under a different name:

o    Imagery Exploitation/Collection Flexibility

o    Softcopy Utility Study

o    Duplication of Exploitation and Photo-Interpreters Through the 1980's

o    Broad Area Search Exploitation/Collection Methodologies

o    Imagery in Agricultural Forecasting

o    Imagery in Support of SALT/ABB Treaty Monitoring

o    Special Collection Against Soviet/East European Targets

o    Analysis Centers

o    Science and Technology Centers

o    Minimum Essential Data Bases

o    Political/Economic Intelligence

o    Third World Data Bases

o    Mobile Fusion Centers

o    Intelligence Support for the RDJTF

o    NRO Ground Support Operations

o    Impact of Space Shuttle on Collection System Costs

25X1

25X1

o [    ]

o  Funding of Intelligence Systems

o  Intelligence Community Support of the Congress, the Public and the Media

o  [    ]                                                                    25X1

o  Structure for Analysis

o  Future Adequacy of National SIGINT Systems

25X1

o  [    ]                                          [    ]  25X1

## II. Tranfers:

The following topics have been transfered to our list of current committments:

25X1

o  [    ]

o  Linguist Shortfalls

o  Presearch Contract on Processing of Overt S&TI

o  NFIP Support to Contingencies                    [    ]  25X1

## III. Additions

The following topics have been added to the list of tentative subjects:

o  Nuclear Monitoring Enhancement Policy and Alternatives

25X1

o  [    ]

o  System Acquisition in the Intelligence Community  [    ]  25X1

25X1

[    ]

TAB

STAT

7 November 1980

## PAO RESEARCH PROSPECTUS

TOPIC:  Intelligence Output Census

REASON:  Preference concerning the allocation of resources put in an economic
process presumes a prior preference as to what is to come out, as well as some
understanding of the relationship between the two.  Identification of preferred
changes in the mix of outputs in turn presumes a comprehensive appreciation of
what is already coming out.  This study seeks to provide the information needed
to achieve that kind of appreciation concerning the NFIP.  The concept has
already been approved by the D/DCI/RM.

OBJECTIVES:  To measure and characterize the flow of formal intelligence
outputs from NFIP suppliers to their respective non-NFIP consumers, and to
other suppliers.  Simply put, the goal is to ascertain who is supplying how
much of what kind of intelligence to whom, and by what means.  Both factual and
inferential transmissions will be addressed.  No effort will be made at this
point, however, to appraise either the costs or the benefits associated with
output flows.  The study will be descriptive, rather and evaluative or
normative.

APPROACH:

1.   Background Studies

     The study should be considered a "new design" insofar as the
intelligence world is concerned (although the same kind of effort is a
routine function of every corporate marketing department worth its salt).
Methodological similarities are to be found in:

   ● Intelligence Periodicals:  A Statistical Report;  RMS Staff
     Paper;  Feb 1980.

   ● Report on the Aerospace S&T Intelligence Users' Questionnaire;
     FTD Management Study;  Jul 1980.

2. Work Breakdown

- Prepare Study Plan

    - Draft (completed)
    - Circulate for RMS Staff Comment (completed)
    - Revise as Necessary to Imcorporate Comments
    - Submit to RMS Management

- Prepare Survey Questionnaire and Instructions for Completion

    - Draft
    - Circulate to Selected (CIA, DIA, NSA, INR) Program Offices for Comment
    - Meet with Program Personnel to Critique Questionnaire
    - Revise as Necessary to Incorporate Comments

- Data Collection

    - Distribute Questionnaire to all Supplier Nodes
    - Coordinate as Necessary to Assure Effective Response to Data Call

- Data Processing

    - Record and Reconcile Questionnaires
    - Code and Enter Data for Computer Processing
    - Produce Specified Distributions

- Analysis and Report Preparation

    - Analyze Computer-Generated Distributions
    - Produce Desired Graphical Presentations (Computer-Generated, where possible)
    - Prepare Draft Report
    - Circulate for Comment

## 3. Methodology

Flows of intelligence information will be measured and characterized between nodes in a defined netork of suppliers and consumers, as illustrated in the Figure below. No effort will be made to document information flows inside a node. Documentation of intra-nodal flows is deemed too ambitious a level of detail to be undertaken on a comprehensive Community-wide scale, but might be considered later on a selective basis as a logical extension of the analysis proposed here.

INFORMATION FLOW: SINGLE CELL ILLUSTRATION
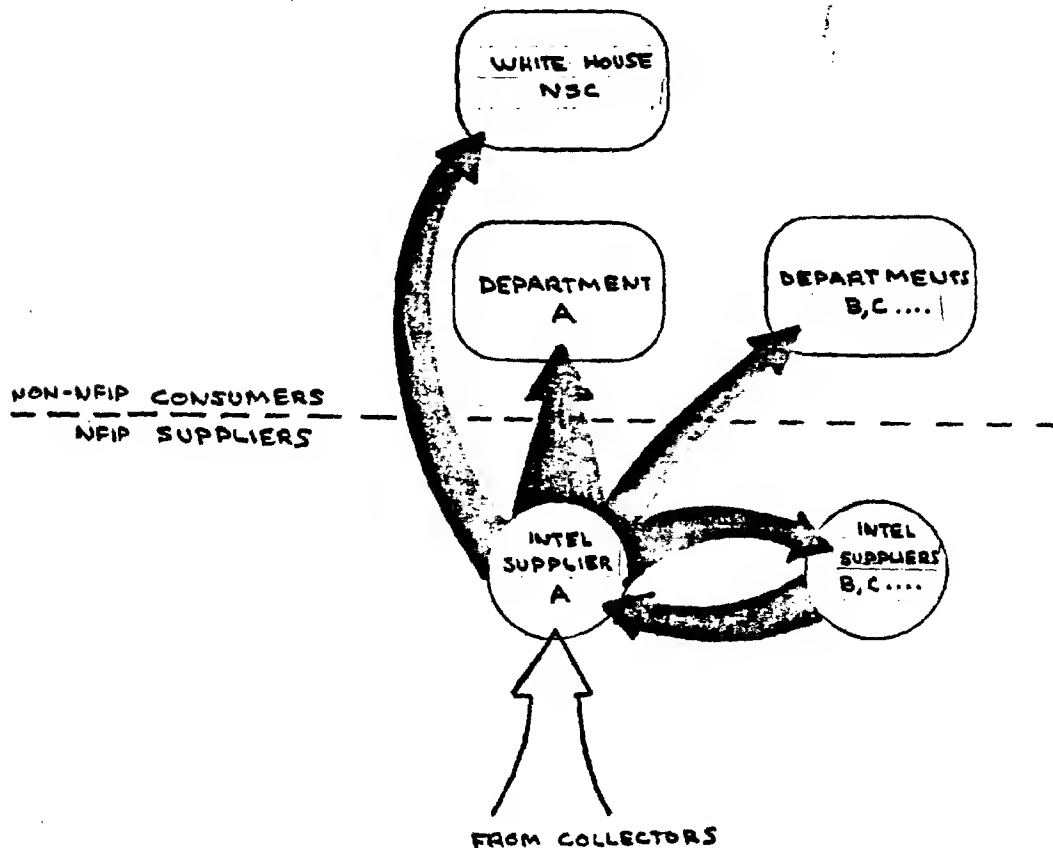


SCHEDULE AND STAFFING: This study is dependent upon successful elicitation of substantial quantities of data from production and related components in five different programs: CIAP, GDIP, CCP, State and DoE. While it is anticipated that the data being sought will not unduly burden program staff, the data collection phase is not likely to proceed free of difficulty, if only of an administrative nature. Recommended manning is to assign two PAO analysts to

at least this phase of the study. Extensive data processing support from DSG is an essential requirement. Ideally, one DSG analyst will participate full-time in a team effort during the data entry and analytical retrieval, or "processing", phase of the study. Part-time DSG assistance in format design, and in critiquing analytical interpretation of the data is also required.

· Estimated time requirements at recommended manning to complete this research are summarized below. High confidence is associated with the estimates for the Study Design and the Analysis and Report Preparation Phases; medium to low confidence with the Data Collection and Processing estimates. Effort, as indicated, totals 14 man-months of RMS resources.

| Phase | Estimated Duration Weeks | Recommended Manning (in addition to PAO "Principal Analyst"*) | |
|---|---|---|---|
| | | Second PAO Analyst | DSG Analyst |
| Study Design | 4 | Part-Time (2/5) | Part-Time (2/5) |
| Data Collection | 8-12 | Full-Time (5/5) | On Call (1/5) |
| Data Processing | 3-4 | On Call (1/5) | Full-Time (5/5) |
| Analysis & Report Preparation | 6 | Part-Time (2/5) | Part-Time (2/5) |

_____

[    ] full-time (5/5) analyst throughout; [    ] part-time (1/5) project leader throughout.

STAT

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TOPIC: PAO Resource Analysis Support System (Nee: PAO Management Inforamtion System)

REASON: Identify the needs and capabilities required for establishing a PAO Analytical Support System.

OBJECTIVE: Define the requirements for and potential use of resource information and analytical capabilities in the PAO operations.

o    Establish a data base of information that could provide PAO with a status monitoring method.

o    Define the need for other data that would routinely support PAO in the analysis of resource issues.

o    Define the analytical tools which could be used by PAO with emphasis on those tools with general application.

APPROACH:

Phase I: Interview RMS analysts to identify the capabilities and data required in the analysis of resource issues. Coordinate with D/DCI/RM.

Phase II: Review previous efforts at analytical support systems, including MIS and office automation to determine applicability to PAO needs.

Phase III: Collect and sort information about the tools and data already housed in RMS. Refine and augment the requirements for data to provide a consistent base from which to work.

METHODOLOGY:

o    Collect data on needs of Staff members.

o    Evaluate capabilities already in house to support the needs.

o    Evaluate possible alternatives to satisfy remaining needs.

o    Determine the level of support to implement additional capabilities and data necessary to satisfy remaining needs.

SCHEDULE:  3-4 man months of effort.

STAFF:  2 people part time.

TAB

7 Nov 1980

TOPIC:  Third World Intelligence

REASON:  Continuing need to evaluate the adequacy of resources assigned to intelligence collection and production in the Third World.

OBJECTIVES:  The purpose of this study is to identify the resources devoted to collection, processing and production of intelligence on the Third World and to examine the productivity and effectiveness of these activities.  This should provide a basis for considering alternative allocations of resources to improve Third World intelligence collection and production within the framework of the FY83 program review.

APPROACH:

The study will consist of three parts:  (1) a review of user needs and current intelligence requirements, (2) a resource and output identification stage, and (3) an output valuation and user satisfaction.

Part I - Review of User Needs and Current Intelligence Requirements

In this part, we will identify the intelligence needs in the Third World as expressed in such documents as the DCID 1/2 and the National Intelligence Topics.

Part II - Resource/Output Identification

In this part, we will integrate the findings of the component studies (listed below), and relate output to the resources devoted to intelligence collection, processing and production in the Third World.  These related studies, although free-standing, will be structured to be compatible with each other for achieving cross-program objectives.  Compatability will be achieved through use of consistent time frames (FY80), data format, and target countries as appropriate.  The other studies include:

DDO Trend Analysis - will trace the allocation of resources in money and manpower to the clandestine collection of intelligence on specific Third World countries, the number of serialized reports produced and their value to the consumer.

STAT

Intelligence Outputs Census - seeks a comprehensive accounting of the flow of intelligence from community suppliers to non-community consumers. Who is supplying how much of what kind of intelligence to whom? Flows concerning the Third World will be identified.

Post Mortem - A Third World crisis, such as the seizure of foreign diplomats in Bogota by Columbian terrorists, will be examined in terms of additional resources for collection, processing and production transferred to that problem in terms of the reduction of effort against other targets and projects.

Crisis Anticipation - This effort is to determine the feasibility of selectively focusing collection and production resources on likely crisis spots earlier than traditional I&W. One candidate approach would be through a Crisis Area Watch List (CAWL).

With the data assembled by these studies, an analysis will be conducted relating resources applied to outputs observed.

Part III - Output Valuation and User Satisfaction

The purpose of this part of the study is to assess the value of the intelligence outputs in the Third World in the context of user derived estimates of product usefulness and in relation to the satisfaction of the intelligence requirements identified in Part I. An important part of this effort will be a survey of previous community analyses of Third World collection and production adequacy and user satisfaction. This will inlude not only a review of RMS studies such as the Contingency and special collection efforts but also available analyses from NFAC, DIA, and other community components.

This effort will be achieved in a series of steps designed to produce actionable analysis for program review, and will involve cooperative effort by RMS with CT and other community components.

1. An assessment of the extent of current satisfaction of Third World intelligence needs.

   (a) Survey of Third World NIOs and DNIOs.

   (b) Review [        ] studies, post mortems and other existing community assessments.

   (c) NFAC review of critical intelligence deficiencies in the Third World.

STAT

2. Identification of major collection and production deficiencies.

SCHEDULE:

Parts I and II will be completed concurrent with the related studies, with the greatest effort expended in the late spring.

STAFFING:

2.0 manyears for Parts I and II

STAT  Project Leader: [ ]

STAT  Analysts: [ ]

TAB

## DDO RESEARCH UTILIZATION

TOPIC:  DDO Research Utilization.

REASON:  Although such publications as the CIA program and budget submissions, the CBJB, and CIRIS provide information on the resources in money and manpower devoted by the CIA to clandestine collection, we have at present no way of relating resources dedicated to collection against specific countries or topics to results (i.e., intelligence output).  We thus lack an essential tool on which to base future decisions on resource allocations.

OBJECTIVE:  To establish the level of resources in money and manpower devoted over the past several years to clandestine collection on certain geotopical areas (e.g., Soviet military, Near Eastern political, etc.) and the resultant information gain in order to determine what, if any, changes are desirable in resource allocation in response to changing requirements (e.g., increased collection in the Third World).

APPROACH:  See attached memorandum.

SECRET

23 April 1980

MEMORANDUM FOR: Acting Director, Program Assessment Office

25X1  FROM: [ ]

SUBJECT: Proposal for a Review of Certain Aspects of the DDO

1. Attached is a draft memorandum prepared by [ ] after     25X1
25X1  discussions with [ ] and me. [ ] has     25X1
long felt uneasy at RMS's lack of precise understanding of just how
effective the DDO utilization of resources (money and manpower) has
been. We do know that the DDO has an excellent internal "management
by objective" system that allows one to track rather exactly
expenditures by objective (such as Soviets, terrorism, etc.). The
DDO also has its own highly developed system of evaluating its
reporting--a system which is now being emulated in DIA and partially
also in State. Through these two mechanisms--the management by
objective and evaluation system--one should be able to obtain insight
into the relative cost and value of DDO reporting. A further insight
could be obtained by tracking the use made of DDO reports by NFAC
through records kept for the Publications Source Survey (PSS). One
would hope, from such a survey, to obtain, for example, a much
clearer insight into the resources actually being devoted to
clandestine collection against the Third World, the value of that
reporting to recipients of DDO "Intelligence Information Reports,"
and the relative value of DDO reporting in finished NFAC intel-
ligence.

25X1  2. [ ] has informed [ ] in the CIA Comptroller's     25X1
Office that we would be interested in learning with what degree of
reliability one could relate DDO resources to "projects/objectives,
to output (Reports), to data base holdings, to uses and relative
importance as contributions to intelligence production." [ ]is     25X1
prepared to put us in touch with an appropriate DDO officer and we

25X1

WARNING NOTICE
INTELLIGENCE SOURCES
AND METHODS INVOLVED

SECRET

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☐ DECL ☒ REVW ON  23 Apr 86
DERIVED FROM  Multiple

hope that such a meeting can be arranged within the next few days. Only after such a meeting can we determine whether the project is feasible and, if so, whether the DDO would lend the necessary cooperation. (You will note that the figures for Table 1 have not yet been added. [          ] assures me that the data is available but has not yet been retrieved from CIRIS. This will be done shortly.)
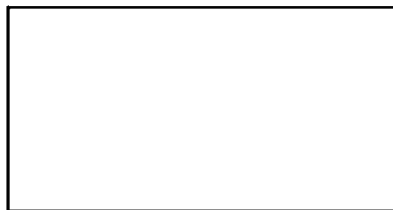
25X1

25X1

Attachment:  a/s

SECRET

Continuing high level interest in determining the effectiveness of

NFIP HUMINT Collection requires yet another attempt be made to establish,

and quantify to the extent possible, the scope, focus and substantive

productivity of CIA's clandestine collection program.

The IC's resources information system, CIRIS, reflects DDO's efforts

in 1979, 1980, and as planned for 1981 as shown in Table 1.

| Objectives | Years (% of Total $) | | |
|---|---|---|---|
| | 1979 | 1980 | 1981 |
| A. Soviet | | | |
| B. China | | | |
| C. E. Europe | | | |
| D. | | | |
| E. Indochina | | | |
| F. Economics | | | |
| H. Nuclear Prolif. | | | |
| I. Narcotics | | | |
| J. Terrorism | | | |
| M. No. Korea | | | |
| N. Cuba | | | |
| O-R Non-Communist World | | | |
| Z. Target of Opportunity | | | |
| TOTALS | 100% | 100% | 100% |

25X1

In its FY 1981 Congressional Budget Justification Book, CIA shows DDO activity for the same period in terms of dollar resources by Organization, by Management/Operations activity, and number of "projects." (Table 2)

In separate justifications, DDO also has presented Human Source Collection funds for 1981 in terms of purpose (ongoing or development) by objectives (Table 3). Our understanding is that DDO creates and retains records of numbers of reports prepared, and disseminated, by organization, by objective/project.

It is known that CIA/OCR keeps records of (or can establish from its data base) how many DDO reports are entered into CIA substantive data bases by year, by subject (or area). It is known also that the principal intelligence source(s) of each "report unit" accessed by CIA's PSS are recorded by year.

Clearly, data in Tables 1 and 3 are relatable. It is less clear, but probable, that the entries in Table 2 are inter-relatable with the data in Tables 1 and 3.

Contractor experience in studying P/E intelligence collection, processing, and reporting shows that audits of DDO activity from reporting through PSS accounting are feasible.

It follows that one should be able to relate DDO resources to projects/ objectives, to output (Reports), to data base holdings, to uses and relative importance as contributions to intelligence production.

Should it be possible to do so in a credible way--and this will depend upon DDO verification of the validity of the suggested relationships--a variety of useful statistical inferences could be developed.

It is our intention to seek verification of the credibility of the suggested relationships, and to acquire appropriate data from CIA as a matter of priority.

25X1

# TAB

25X1

25X1

*How far along is*

*29 Oct 80*
*7 NW 80*

RESEARCH PROSPECTUS

TOPIC:  Modeling SIGINT Collection Against Third World Targets

25X1

25X1

REASON:  Continuing emphasis on Third World coverage and capabilities.

OBJECTIVES:  To provie RMS with an assessment of the relative benefits
(productivity and to the extent possible utility) and costs of SIGINT
collectors in the production of intelligence on the Third World.  This analysis
will provide the basis for selection of collection improvements that will most
effectively increase US intelligence coverage and capability in the Third
World.

25X1

APPROACH:

1.  This study will draw on work previously done by _____
    completed for NSA) and PAO (Special Collection Study)

2.  This study has two major phases; a resource productivity analysis and
    case studies of two recent Third World crises.

    I.   The resource productivity analysis will be a statistically based
    assessment of the relative resource productivity of various SIGINT
    collection systems currently applied to Third World target regions.
    Inputs will include resources and volumes of special collection,
    echelon collection, overhead collection, etc., outputs will be
    numbers of serialized SIGINT reports on each target region.

    II.  The case study work will provide a context within which to
    interpret the productivity analysis by assessing collection utility
    in a crisis focusing on collection source usefulness and timeliness.
    A narrative approach focus on qualitative evaluations will be
    combined with a quantitative citation analysis.

25X1

TOP SECRET

**TOP SECRET**

SCHEDULE:

    a.   Work plan by 15 November 1980.

    b.   Preliminary resource productivity analysis - 1 February 1981.

    c.   Preliminary case study output - 1 March 1981

    d.   Draft 1 - 30 April; Draft 2 - 30 May 1981

STAFFING:

25X1        1 fulltime

1/3 time overall with early, mid and late peaks up to 1/2 time.

**TOP SECRET**

25X1

TAB

PAO RESEARCH PROSPECTUS

TOPIC:  <u>Resource Management Implications of Crisis Support</u> - This study would exa-
mine the demands made upon production and collection resources in late 1979
and early 1980 when terrorists in Columbia held 25 diplomats, including the
U.S. ambassador, hostage for more than a month.  The study would also examine
the impact of diverting resources from other intelligence priorities--Iran,
Afghanistan and the USSR, for example--in order to cover this crisis.

REASON:  The recommendations contained in PAO's "Support to Contingency Forces"
study, the Senior Review Panel's evaluation of the Community's performance
in estimating North Korean troop strength, and that panel's assessment of
the Community's identification of Soviet troops in Cuba, all indicate the
need for coordinated management of production and collection resources, par-
ticularly during periods of crisis, in order to ensure that the requirements
of the moment are met without degrading the Community's ability to respond
to continuing priorities or other new threats.  If resource managers are to
play a role in this coordination process, they must understand not only the
limits to which production and collection resources can be pushed, but what
the different demands and relationships between demands are likely to be and
what effect the crisis-generated demands and new relationships are likely to
have on other intelligence efforts and resources.

OBJECTIVES:  An analysis of the Columbian hostage incident should reveal the
shifts in function, organization, communication patterns and information
needs experienced by both collection and production elements of the Commun-
ity when daily work routines are interrupted by the necessity to respond to
a crisis.  An assessment of these shifts would in turn provide resource man-
agers with a simple model of the types of resource demands that could be gen-
erated by future crises.  Such a model, if quantified, might even be used
in planning the amount of elasticity and flexibility needed in future re-
source allocation if the Community is to cope with multiple crises or mul-
tiple priorities.

APPROACH:  Although this study would constitute a significant deviation from pre-

vious post mortem exercises, review of several of these earlier efforts (such as those mentioned above) would equip the study team with valuable background information. The study group should also review the PGS study now in progress on "Collection Denial in the Third World: A Method for Long Range Planning," the PAO studies of ⬚ and several of the NCPO's collection tasking studies in order to gain insights into the value of various sources of information and the often symbiotic relationship between those sources. The study team should plan to work closely with the NCPO, CTS and PGS, and might consider inviting one member from each of these components to participate in this effort.

A "Cross-Impact Systems Dynamics analysis" might profitably be used for this study because it permits the creation of both descriptive and quantitative models. "Systems Dynamics" is a general umbrella for a variety of modeling approaches to forecasting future changes based on the levels and rates of change of key indicators. Because the technique does not require the precision in original assumptions required by other modeling methods, it has been successfully used to model a variety of complex and rapidly changing economic situations. CIA's Office of Traning and Education offers courses in the use of Systems Dynamics, and personnel there could certainly assist team members in choosing the most applicable method.

The addition of "Cross-Impact analysis" to the Systems Dynamics method-- originally implemented by CIA's Office of Research and Development ⬚ ⬚-permits an examination of the inter-relationships between parts of the model to determine how a change in one variable ⬚ ⬚ for example) will effect other variables ⬚

*I am very skeptical*

STAT

# TAB

STAT

29 Oct 80

TOPIC:  Crisis Anticipation

REASON:  To provide support during crises, the intelligence community must often divert collection and production assets.  Especially with collection assets, once diverted there may be a considerable lag time before they are fully effective if there is no current data base on which to build the collection.  To maintain worldwide current data bases is prohibitively expensive.  This effort is to determine the feasibility of selectively updating data bases by anticipation of likely crisis spots.

OBJECTIVES:  The objectives are:

o    To determine if any effective crisis anticipation mechanism presently exists.

o    If not, to ascertain with representatives of the intelligence agencies how such a mechanism could best function.

o    To recommend, based on intelligence community inputs, the establishment of such a mechanism if it doesn't exist, or possible improvements if it does.

APPROACH:

1.    Background Studies - Although the problem has been recognized in other reports, it was highlighted in the RMS Contingency Study.

2.    Work Breakdown - An informal working group chaired by a PAO analyst with a single representative each from CIA, DIA, NSA and State would examine the following:

a.    Do any present watch lists or other predictors fulfill this need?

b.    If not, what needs and contributions of each agency could support such an activity?

c.    What specifically could be done and who could best do it?

3.  Methodology - It would be most effective to have active participation of each of the involved agencies. The representative of each agency would do the leg work to determine that agency's needs, capabilities, and positions. The working group would serve a coordinating function and provide, under RMS chairmanship, the overall direction and impetus to reach timely and responsive conclusions.

SCHEDULE: The working group would meet periodically over a period of 3-4 months so that the programs would have an opportunity to consider this activity in their program submissions.

STAFFING/ORGANIZATION:

STAT    Project leader:

STAT    Analyst:

*Could this relate to a more formal mechanism?*

2

# TAB

## Imagery Acquisition

TOPIC:  The imagery collection requirements process and its relation to collection and exploitation resource allocation decisions.

REASON:  Study will provide a basis for developing RMS recommendations/positions on imagery mix acquisition decisions in the FY 1983-1987 NFIP Program Review.

OBJECTIVES:  To provide the DCI with: (1) an understanding of the basis for imagery collection requirements, both current and projected; and (2) insight into the effect of interrelationships among important collection variables (frequency, quality, quantity, satisfaction) on system acquisition decisions.

- How does the Community requirements process work in the imagery area?

- How does the Community distinguish between requirements for management of existing resources, and requirements for system acquisition?

- How sensitive to projected requirements are system acquisition decisions?

- Can requirements for system acquisition be "validated" in the same way that operational collection requirements are?  If not, what alternative approach would be appropriate?

APPROACH:

Background Studies:  PAO "Imagery Applications" study (1978) should be reviewed.  OD&E has done some studies on confidence modeling and other statistical techniques to manage collection requirements.

Work Breakdown:

  Phase I:  Compilation of background data on the requirements process: how it works, what the data flow looks like, key decision points, etc.  Also develop the data on the status of current requirements and levels of satisfaction.

  Phase II:  Parametric analysis of collection requirements to determine the degree of sensitivity of system acquisition decisions to the nature of the projected requirements.  Emphasis on the interrelationships among collection variables and development of appropriate measures of merit for requirements satisfaction.

  Phase III:  Develop conclusions and recommendations, with a focus on FY 1983 imagery mix decisions.

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Methodology:

Background Data and Analysis: Review available studies and other relevant documentation. To explore the status of current requirements, run a statistical analysis of at least two samples, e.g., two different one-month periods (one worst-case and one normal). Objective is to develop data on breakdown among types, periodicities, quality, and levels of satisfaction of current requirements. Requires access to CAMS historical data.

Parametric Analysis: Run two sets of low-fidelity simulations, the first from a collection management perspective, the second from a system acquisition perspective:

-- Collection Management: (how to use existing systems): Assuming that imagery collection resources are fixed, seek to maximize satisfaction levels by varying collection parameters. Solve for a range of system mixes (or, more accurately, collection capacities.)

-- System Acquisition: (how to select and size future systems): Assuming that satisfaction levels must be fixed, seek to minimize collection resources by varying collection parameters. Solve for a range of satisfaction levels.

The results of these simulations should yield some interesting insights into the differences between requirements for a "buy policy" and for a "use policy." In order to keep our analysis manageable, we will restrict it to a selected number of examples, probably two or three types of standing requirements: search, surveillance, and MC&G. In each of these categories, we would assume worst-case scenarios, e.g., all [ ] for search, all [ ] for surveillance, all [ ] for MC&G. (we would have to devise some way of representing the effect of "specials"--perhaps a straight percentage of collection resources off the top dedicated to specials).

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Schedule:

Phase I: November through January.
Phase II: January through March.
Phase III: April through May.

Staffing (Phase I only; Phases II and III to be determined):

• Supervisory personnel (half time).
• Staff Analysts (two, both half to full time; [ ]
• Contractor support?

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DRAFT
TERMS OF REFERENCE

MC&G and Broad Area Search in Imagery Mix Study

1.  The study is to be conducted jointly by the DCI and the Department of Defense. Principal representatives on the study team will be RMS, CTS, ASD/C³I, and DUSD/PR. NRO Staff and DRSP Staff will serve in a consultative role.

2.  The study is to be completed by 15 May 1981. An interim report will be provided in mid-March 1981.

3.  Purpose of the study is to evaluate which is the most cost-effective alternative for satisfying both the DoD MC&G requirements and national intelligence requirements for broad-area search in the post-1985 timeframe.

4.  Scope of the study:

    a.  Develop a thorough understanding of current and projected MC&G and BAS imagery requirements: how they are derived, how the products are used, and what the status of those requirements are.

    b.  Identify areas of potential overlap and complementarity between MC&G and BAS requirements.

    c.  Identify and fully evaluate collection system options for MC&G and BAS missions. Establish estimates of capability, degree of technical and schedule risks. These options should include as a baseline the currently-programmed national imagery mix for post-1985.

    d.  Establish valid cost estimates for these options, including costs for processing, exploitation, and dissemination. (ADP costs should be included.)

    e.  Explore relationship between system options and the national imagery mix (especially options for a national supplementary imaging system).

5.  In order to conduct a thorough study, both DoD and DCI agree to a prompt and full exchange of data necessary to understand the problem and evaluate the options.

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6 November 1980

PAO RESEARCH PROSPECTUS (DRAFT)

TOPIC: Reassessment of Nuclear Monitoring Enhancement Policy and Alternatives

BACKGROUND AND REASON: Concern over the Community's continuing capability to
discharge the DCI's responsibilities for monitoring foreign nuclear
25X1  developments under more stringent testban treaties, in an environment where the
threat of nuclear proliferation was growing, fostered a policy of funding
gradual but steady enhancement in the Atomic Energy Detection System (AEDS)
across a broad front.

Earlier expectations concerning progress in test ban treaty negotiations have
not materialized, however. The Limited Test Ban Treaty (LTBT) still awaits
Senate ratification, and the prospects for achieving a Comprehensive Test Ban
25X1  Treaty have dimmed considerably, at least for the near term. Additionally,     25X1
programmatic complications have arisen to delay and jeopardize planned
improvements
These developments, affecting both the
urgency of, and wherewithal for, enhancing AEDS, could warrant a re-assessment
of nuclear monitoring alternatives.

OBJECTIVE: To define and re-assess alternative approaches to further
improvement in AEDS capability.

APPROACH:

1.  Background Studies

    o    *Monitoring a Comprehensive Test Ban; RMS Study; Nov 1977

    o    Activity to Monitor Safeguard D, etc,; JAEIC Annual Report; Dec
         1979 (latest)

25X1     o

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*NOTE: This PAO study addressed the test ban monitoring issue at length.
While the study provoked strong controversy, drawing the virulence of those
within the community having a vested interest in continued testing of nuclear
weapons, the fundamental conclusions reached therein remain valid in the
judgment of the author and certain other PAO Staff who have reviewed the paper.

2. Work Breakdown

To be determined. A modest effort of two to four man-months is recommended.

3. Methodology

A two-phase effort is suggested. Phase I would be programmatic factfinding, in which PAO Staff would re-acquaint itself with the details of program developments since the 1977 assessment. Phase II would consist of framing and assessing, in terms of costs and operational capabilities, a range of alternative AEDS enhancement programs. The analysis done in the previous PAO study remains a useful source of assessment criteria. The matrix employed in that study to summarize operational capabilities (see following page) would be reviewed and updated as appropriate.

SCHEDULE AND STAFFING: Two to four man-months.

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STUDY PROSPECTUS/DRAFT - 7 November 1980

TOPIC:  Indications and Warning Centers in the Intelligence
Community.

REASON:  A common argument supporting the procurement of advanced
collection systems has been the expected value of real-time
information for indications and warning purposes.  The tremendous
increase in the volume of this information, coupled with its rapid
dissemination in a raw and unanalyzed form, has effectively expanded
the number of organizations capable of serving as Intelligence
Community I&W centers.  This study will examine the functions and
resources devoted to those components of Community organizations
that, regardless of official designation, fulfill the following three
criteria:

- Perform initial analysis of raw intelligence;

- Issue alerts on the basis of such analysis; and

- Receive their funding from the National Foreign Intelligence
  Program.

This study is designed to serve as background for the FY 1983 Program
Review.  If appropriate, a cross-program (CCP/GDIP/CIAP) issue will
be raised.

OBJECTIVES:

- To provide the DCI with a comprehensive study that examines the
  NFIP resources devoted to indications and warning centers.

- To trace the flow of intelligence collected for I&W purposes
  through the indications and warning centers to the ultimate
  consumers, while attempting to give an indication of elapsed
  time:

  -- What specific functions does each center fulfill?

  -- On which collection sources does each center rely most
     heavily?

  -- To what extent do these centers communicate with one
     another?

- To examine the role of these centers under varying conditions of
  stress.

  -- How well do these centers serve their designated consumers
     under normal circumstances?

  -- How well do these centers respond in crisis?  Are they
     prepared to respond equally well to crises in all parts of
     the world?

WORKING PAPER

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- To raise resource issues (if appropriate to the FY 1983 Program Review).

  -- Has the increase in Community I&W centers resulted in unnecessary duplication?

  -- Might the functions performed by these centers be consolidated?

APPROACH:

25X1  Background Studies: [        ] study on the MMIC; [        ] I&W    25X1
and Contingency Support studies; CIRIS data; DIA MMIC and NSS studies; other Community I&W studies.

Work Breakdown:

- Phase I will consist of a cross-program survey of the Community to identify:

  -- those centers that meet the three criteria sketched under "REASON" above;

  -- the extent of NFIP funding for each; and

  -- potential resource issues that might be raised during Program Review.

- Phase II will examine each center to determine their specific functions, the consumers they serve, the collection sources on which they draw, and the technical support on which they rely.

- Phase III will be a cross-program analysis of the I&W centers funded within the NFIP. It will provide a framework for aiding the DCI in determining whether the programs proposed for FY 1983-1987 will serve the Community's I&W mission in the most effective and efficient manner possible.

METHODOLOGY: The effort will begin with an examination of the information in program and budget submissions as containing funds for I&W centers. Briefings will be requested of individual centers to obtain specific responses to the questions outlined under Phase II above.

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**WORKING PAPER**

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- To raise resource issues (if appropriate to the FY 1983 Program Review).

    -- Has the increase in Community I&W centers resulted in unnecessary duplication?

    -- Might the functions performed by these centers be consolidated?

APPROACH:

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Background Studies: [                    ] study on the MMIC; [                    ] I&W and Contingency Support studies; CIRIS data; DIA MMIC and NSS studies; other Community I&W studies.

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Work Breakdown:

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SCHEDULE:

|          | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May |
|----------|------|------|------|------|------|------|-----|
| Phase I  | X    | X    | X    |      |      |      |     |
| Phase II |      | X    | X    | X    | X    |      |     |
| Phase III|      |      |      | X    | X    | X    | X   |

(NOTE:  During June 1981, the program submissions will be examined and, if appropriate, a cross-program issue will be drafted.)


STAFFING:

25X1    Project Leader: ☐

25X1    Analysts: ☐ (2/5 time); two others (2/5 time)

**WORKING PAPER**

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TOPIC: The Research and Development Effort in the Intelligence Community.

REASON: Study will serve as background for the FY 1983-1987 NFIP Program Review.

OBJECTIVES: To provide the DCI with a clear understanding of the extent and character of the R&D funded within the NFIP.

- How are NFIP resources distributed for R&D?

- How are decisions made on what type of R&D should be pursued?

- Is the R&D program funded within the NFIP a balanced one, given overall intelligence objectives?

- How readily does the R&D Community adapt to changing intelligence problems?

- Are there areas of research that are being neglected?

APPROACH:

Background Studies: Previous program and budget submissions; CIRIS data; other background studies will be sought.

Work Breakdown: This study will be divided into three phases:

- Phase I will consist of a cross-program survey of the NFIP to determine which organizations receive R&D funding, how much they receive, and what kinds of problems their efforts are directed to support.

- Phase II will examine how funding decisions for R&D programs are made within the various organizations. It will analyze both the criteria used in making these judgments and the management structure responsible for the decisions. Some comparisons with the techniques employed by high technology industries will be made.

- Phase III will be a cross-program analysis of the R&D effort within the NFIP. It will provide a framework for aiding the DCI in determining whether the R&D program proposed for FY 1983-1987 serves the long-term intelligence effort in the most effective and efficient manner possible.

Methodology: The effort will begin with an examination of the information in program and budget submissions concerning those decision units identified as containing R&D funds. Follow-on questions will be asked of individual organizations either through requests for briefings or through a formal questionnaire.

SCHEDULE:

|              | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May |
|--------------|------|------|------|------|------|------|-----|
| Phase I      | X    | X    | X    | X    |      |      |     |
| Phase II     |      |      | X    | X    | X    | X    |     |
| Phase III    |      |      |      |      | X    | X    | X   |

(NOTE: During June 1981, the program submissions will be examined and, if appropriate, a cross-program issue paper will be drafted.)

STAFFING:

Project Leader: [        ]

Analysts:  Phase I/ [    ] (1/5 time)
           Phase II-III [        ] (1/5 time); [    ] (1/5 time)

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TOPIC: PAO Resource Analysis Support System (Nee: PAO Management Inforamtion System)

REASON: Identify the needs and capabilities required for establishing a PAO Analytical Support System.

OBJECTIVE: Define the requirements for and potential use of resource information and analytical capabilities in the PAO operations.

o   Establish a data base of information that could provide PAO with a status monitoring method.

o   Define the need for other data that would routinely support PAO in the analysis of resource issues.

o   Define the analytical tools which could be used by PAO with emphasis on those tools with general application.

*Examples?*

APPROACH:

Phase I:  Interview RMS analysts to identify the capabilities and data required in the analysis of resource issues.  Coordinate with D/DCI/RM.

Phase II:  Review previous efforts at analytical support systems, including MIS and office automation to determine applicability to PAO needs.

Phase III:  Collect and sort information about the tools and data already housed in RMS.  Refine and augment the requirements for data to provide a consistent base from which to work.

METHODOLOGY:

o   Collect data on needs of Staff members.

o   Evaluate capabilities already in house to support the needs.

o   Evaluate possible alternatives to satisfy remaining needs.

o   Determine the level of support to implement additional capabilities and data necessary to satisfy remaining needs.

SCHEDULE:  3-4 man months of effort.

STAFF:  2 people part time.

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7 Nov 80

TOPIC: Systems Acquisition in the Intelligence Community

REASON: Systems acquisition in the intelligence community has evolved towards requiring a more extensive review process. This has affected both the costs and the time required for an initial operational capability. Understanding the nature and magnitude of those effects could lead to procedural changes intended to improve the time required to have new capabilities available to the intelligence community.

OBJECTIVES: The objectives of this study would be to:

o Understand the effects that the more extensive review process of recent years has had on total system acquisition costs and time.

o In anticipation that those effects have both positive and negative connotations, attempt to assess an overall net impact or, as an alternative, estimate a net impact in specific cases.

APPROACH:

1. Background Studies - Rand Corporation did a study in 1979 on "Acquisition Policy Effectiveness: Department of Defense Experience in the 1970s."

2. Work Breakdown - As the study is to encompass a historical review of representative major system acquisitions, it is tentatively proposed to look at the following areas:

   a. The original U-2 development program as an early acquisition.

   b. The evolution of satellite acquisitions.

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3. Methodology - After reviewing the RAND study, interviews with key people involved in the acquisition process of the various systems will be conducted. While cost and time line figures should be readily available from the historical record, the context for understanding the meaning behind the numbers must come from the memories and written records of the people involved. The study will rely heavily on descriptive methods with the role of mathematical analysis yet to be determined.

SCHEDULE:

The study will occur in three phases:

I. Background reading and discussion with responsible representatives of the program offices to elicit their active participation in developing the study. 1 month.

II. Interviews with people involved in specific acquisition programs. This will include various people in the intelligence community and contractors and will involve travel. The historical records will be reviewed along with other pertinent data. 4 months.

III. Any remaining data acquisition, analysis and writing the report. 2 months.

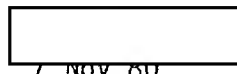STAFFING AND ORGANIZATION:

STAT    Project leader: [                    ]

STAT    Analyst: [                    ]

LEVEL OF EFFORT:

For the first 5 months, it will take 3/4 of the analyst's time. For the last 2 months, 1/2 of his time.

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7 NOV 80

TOPIC:   The Intelligence Community Working Group on Inflation

REASON:   An Intelligence Community Working Group on Inflation has been formed and tasked with conducting a critical review of current procedures for estimating inflation and exploring alternative approaches that could improve our ability to protect future NFIP buying power.

OBJECTIVES:

1.   To identify aggregrate cost categories that accurately summarize NF P expenditures.

2.   To use appropriate forward pricing techniques for indexing these categories to inflation.

3.   To establish procedures for the routine exchange of inflation information.

APPROACH:

1.   PAO's analysis of the FY82 NFIP inflation rate and the FY82 budget submissions and inflation backups will be used as inputs to the Group.

2.   The group will have a staff composed of designees from each of the program offices as well as representatives from PGS, PBO, and PAO. PAO members will be the study directors of the Working Group responsible for the production of timely, accurate and useful documentation.

SCHEDULE:   The Working Group has a tentative start date of 15 November and a completion date of 1 June 1981.

STAFFING/ORGANIZATION:   1/2 to 3/4 time from late November to end of May to direct Working Group research efforts.

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7 Nov 1980

TOPIC:  RMS Resource Allocation Techniques

REASON:  RMS should take the community lead in developing and applying innovative techniques for both building and evaluating NFIP programs and budgets.

OBJECTIVES:  The overall objective of the study would be to propose and assess alternative ways of improving the process by which NFIP budget is created.  The near term objective would focus on improving RMS procedures in one particular area -- namely, how we revise the final 1-N rankings to incorporate issue paper decisions.  In the longer term, we would also like to examine other facets of the process, including the feasibility of developing:

  o    common measures the program managers might use to evaluate and justify their program submissions,

  o    ways to better evaluate program managers' responsiveness to DCI guidance,

  o    ways to better structure criteria used to select issues, and

  o    alternative formats for structuring NFIP and PRC(I) discussions to better elicit their opinions.

APPROACH:

  1.  Background Studies

     o    The MATHTECH study in 1979 examined and endorsed current procedures used to mechanically interleave the individual program rankings to create the initial 1-N listing.

     o    Decision analysis course described a quantitative approach used by Army to create its ZBB ranking.  The methodology stimulated questions as to whether an analogous approach might be used in RMS.

     o    Ranking approach used in OSD/Policy as reported on by 

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o [                                    ] included a checklist of
questions that might be applied during program and budget review
to more uniformly scrutinize new system starts. Possibilities
for extending the checklist idea to other non-collection areas
should be examined.

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o [                              ] on developing a structure for
evaluating alternative collections systems.

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o [                    ] work in developing a structured analysis for
PHOTINT systems.

## 2. Work Breakdown

Phase I of the study will focus on the short-term objective of trying
to improve the mechanism by which decisions resulting from issue papers
are incorporated in the final 1-N NFIP ranking:  Tasks envisioned include:

o   documenting in detail the steps (and associated timelines) by
    which the final FY82 NFIP rankings submitted to the President
    evolved from the original Program Managers' rankings and budget
    decisions,

o   examining how other agencies (both in and outside the
    intelligence community) implement ZBB ranking,

o   testing alternative procedures (including quantitative
    techniques) against the conditions prevalent during the FY82
    budget development to determine the advantages and disadvantages
    of the alternative approaches, and

o   summarizing the results in a written report for the D/DCI/RM.

Depending on the success of the initial Phase I effort and the depth
of information gathered in discussing ZBB implementations among other
users, a longer term, Phase II effort, could be pursued on the other
topics listed above.

## 3. Methodology

The overall methodology for Phase I, as implied in the Work Breakdown
discussion, is to improve the ranking process by identifying techniques
used in other agencies as well as quantitative techniques that might apply

to the problem, and by testing these techniques in the RMS environment. Quantitative approaches which might be considered include:

- multi-attribute decision theory,

- Bayesian decision theory, or

- hierarchical comparison techniques.

The goal in applying any new approaches would be to better structure, not replace, the subjective opinions of individuals attempting to assess how alternative rankings of decision packages at risk (i.e., those close to the likely NFIP funding level) affect "mission areas" or "themes" important to the DCI and the NFIB. For example, in the FY82 budget development, a desirable technique would specifically highlight the impact that alternative final rankings might have on packages in the _____ range which contribute to Third World production. Organizationally, the assessments could be done by teams composed of representatives from PBO, PAO, IRO, and PGS who are interested in particular areas.

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SCHEDULE: It is estimated that Phase I will require about 4 man-months of effort. The results should be available in May 1981, to permit possible implementation during the FY83 budget cycle.

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STAFFING:

Project leader: _____

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Analysts: _____ (half time through April)
_____ (quarter time through April)